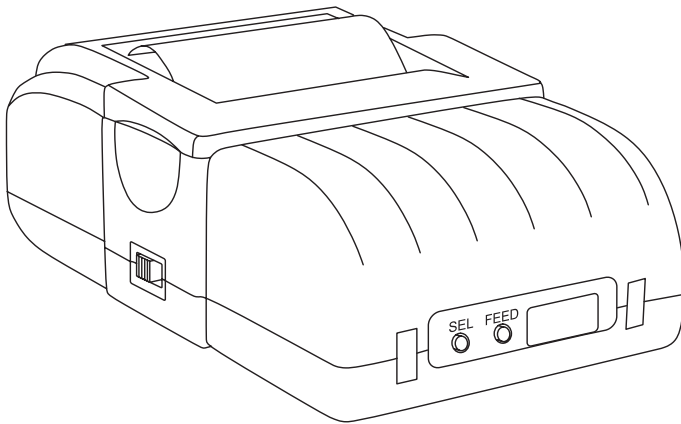


# Portable Wireless IrDA Printer

## Instruction 24-9422 Operation & Maintenance

Rev. 0 – September 2001



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**Notes:**

# Description

## General

Bacharach's portable wireless printer uses infrared technology to communicate with other Bacharach instruments that are capable of transmitting data using the Infrared Data Association (IrDA) standard.

The printer is designed around a patented easy-loading paper mechanism, which consists of a main cavity into which a paper roll is dropped for loading. The thermal print head is at the front of the cavity and a rubber roller is attached to the lid of the mechanism. When the lid is closed, the paper is pinched between the rubber roller and the print-head to give a close alignment and a consistent pressure.

## Features

- Small size
- Quiet and fast printing
- Direct line thermal printing
- Typically 1,000 printouts from a fully charged battery pack
- Easy loading paper
- Easy maintenance and head cleaning
- User settable printer parameters using external pushbuttons
- Self-test function

## AC Adapter / In-Car Charger

The supplied AC adapter (either 120 or 230 VAC) or 12 V in-car charger can be used to either charge the battery pack, or both charge the battery and run the printer when the battery is partially discharged.

**Important!** *The AC adapter and in-car charger cannot operate the printer with the battery pack removed, or when the battery pack is completely discharged.*

## Belt Clip

If desired, the supplied belt clip and screws can be installed to allow the printer to be attached to a vertical surface or carried on a belt.

## Power Switch

Use the Power switch located on the left side of the printer to turn the unit ON and OFF (see Figure 1).

## Indicator LEDs

There are two LEDs on the front panel that provide the following information about the printer's status:

- **Power (Green):** The Power LED glows green when the printer is turned ON.
- **Battery (Red):** The Battery LED glows red when the battery is being charged. This LED flashes when the battery is fully charged, and turns OFF when the battery charger is disconnected.
- **Error (Green):** The Power LED flashes once-a-second when: 1) the printer is out of paper, 2) when the paper cover is opened, or 3) when the printing head temperature exceeds 140 °F (60 °C).

## Pushbuttons

There are two pushbuttons located on the front panel that perform the following functions:

- **FEED:** Momentarily press this button to advance the paper. Pressing and holding down the button causes the paper to feed continuously. This button is also used to start the printer's self test (refer to Section *Self Test*).
- **SEL:** Press this button to enter the printer's set-up mode (refer to Section *Set-Up Mode*).

## Connectors

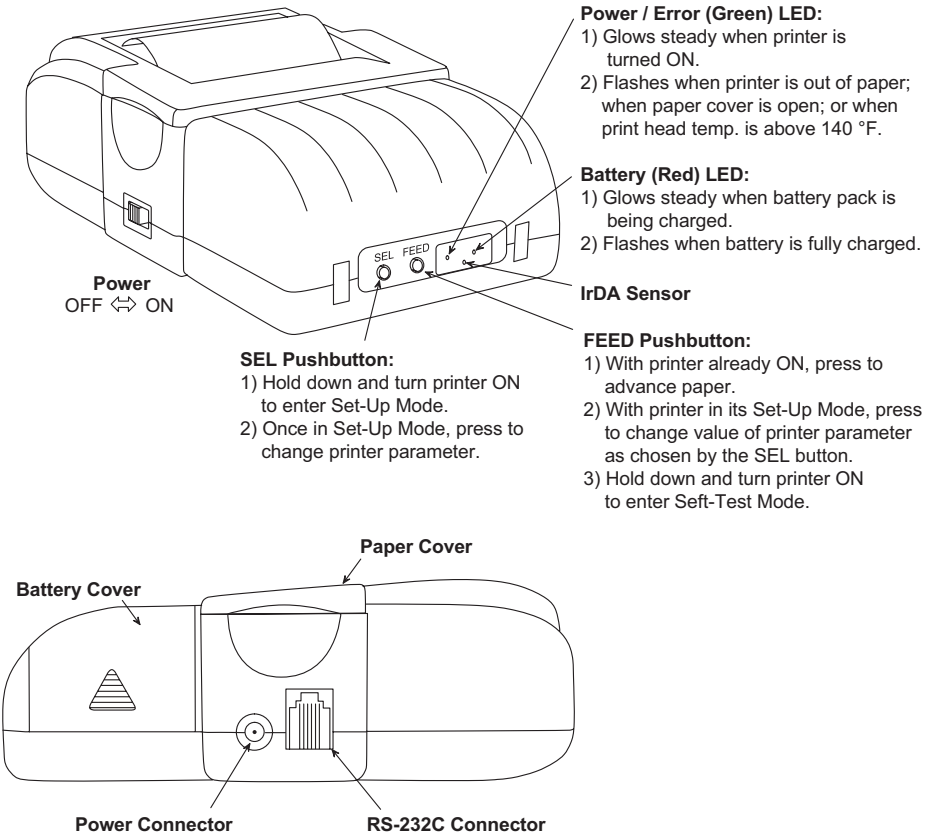
Two connectors located on the right side of the printer provide the following functions:

- **Power:** Connect the AC adapter or in-car charger to this connector to charge the battery pack, or directly power the printer.
- **RS-232C:** Not used in conjunction with Bacharach instruments.

## Sensors

There are three sensors that perform the following functions:

- **Paper Cover:** When the paper cover is open the printer is disabled to prevent damage to the print head. This condition is indicated by the Power LED flashing.
- **Paper Out:** When the paper roll runs out, the printer is disabled to prevent damage to the print head. This condition is indicated by the Power LED flashing.
- **IrDA:** Located at the front of the printer, this sensor accepts the infra-red signal from the instrument.



*Figure 1. Component Locations and Functions*

# Technical Characteristics

Printing Method .....	Direct thermal
Number of Columns .....	32 columns, 384 dots/line
Character Size .....	0.06 x 0.12 in. (1.5 x 3.0 mm)
Line Pitch .....	0.1 in (4.0 mm)
Paper Width .....	2.25 in. (57.5 mm)
Interface .....	IrDA and Serial (RS-232C)
International Characters .....	U.S.A., France, U.K., Denmark I, Sweden, Italy, Spain, Japan, Norway, Denmark II, Korea
Buffer .....	7 kB
Baud Rate .....	2400 – 11,5200 bps
Power Requirement .....	12 V, 1.2A (with battery) 12 V, 3 A (without battery)
Battery Pack .....	Lit-ion, 7.2 V, 1650 mAh
Weight .....	13 oz (0.4 kg)
Dimensions .....	3.6 x 5.5 x 2.0 in. (92 x 140 x 51 mm)



# Operation

## Precautions

To ensure the proper operation of the printer and prevent the possibility of voiding the warranty, be sure to observe the following precautions:

- Avoid dirty or dusty locations, or those with excessive heat or humidity
- Choose a stable level or solid wall on which to mount the printer
- Use only the supplied power adapter to charge the battery pack
- Ensure that the AC adapter will be plugged into the correct source of AC power
- Use only the supplied thermal paper or its replacement part

## Self Test

The self-test mode checks the printer's control circuit functions, setting parameters, software version, and printer quality.

1. Before running the self test, make sure there is sufficient paper to run the test (18" [46 cm]); the paper cover is closed; and that the printer is switched OFF.
2. Press and hold down the FEED pushbutton; then switch ON the printer to begin the test.

**Note:** *The test can be aborted by switching OFF the printer.*

3. The following typical information is printed, followed by the printer's complete character set:

Version	: 1.1.6
Data bit	: 8 bit
Parity	: None
Baud rate	: 9600 bps
Handshaking	: DTR
Country	: U.S.A.
Print mode	: Text (upright)
Paper	: Normal paper
Density	: 100%
IrDA	: IrDA-SIR
Buffer size	: 7000Byte
Head volt	: 7.1V
Head temp.	: 31°C

## Set-Up Mode

The printer has been set up at the factory with the following default parameters:

Baud rate : 9600 bps  
 Handshaking : DTR  
 Country : U.S.A.  
 Print mode : Text (upright)  
 Paper : Normal paper  
 IrDA : IrDA-SIR

If necessary, the default parameters can be changed as follows:

1. With the printer initially switched OFF, press and hold down the SEL pushbutton; then switch the printer ON.
2. The printer now goes into its set-up mode and prints its current parameter status. Observe that the green Power LED flashes to indicate that the printer is in its set-up mode.

**Note:** *If no pushbuttons are pressed within 15 seconds, the set-up mode is automatically terminated without changing the original parameters.*

3. Baud rate is first parameter printed. Pressing the FEED button causes the value of that parameter to change in the sequence shown in the following table.

SEL Button	FEED Button
Baud rate	2400, 4800, 9600, 19200, 38400, 57600, 115200
Handshaking	DTR, X-on/X-off
Country	U.S.A., Korea, Cyrillic, Denmark2, Norway, Japanese, Spain, Italy, Sweden, Denmark1, U.K., Germany, France
Print mode	Text(upright), Data(inverted)
Paper	Normal paper, Reprint paper
Density	50 – 150% in 5% steps
IrDA	Chamjin-Ir, IrDA-Sir, BHT-Ir(DENSO), EL-ME-Ir


4. Press the SEL button to print the next parameter; then, if necessary, use the FEED button to change that parameter to the desired value.
5. Once all parameters have been set, press and hold down the SEL button then press the FEED button.

## Using the Printer

Turn ON the printer and, if necessary, set it up as previously described under the heading *Set-Up Mode*. Also ensure that the instrument that is sending data to the printer is set up to operate in its IrDA print mode (refer to the instrument's instruction manual for set up information).

Align the printer's infrared sensor to that of the instrument and begin printing as described in the instrument's instruction manual.

# Maintenance

 **WARNING!** Remove all electrical connections before performing any maintenance work.

## Cleaning the Printer

External surfaces of the printer may be kept clean by simply wiping with a damp cloth. *Do not* use any solvents that may attack the plastic case. Be sure that the inside surfaces are kept dry at all times, and that the external surfaces are thoroughly dry before re-making any electrical connections.

## Opening / Closing the Paper Cover

From underneath the printer, use your thumb and forefinger to push up on the paper cover until it releases from its latches (see Figure 2.)

Close the cover by pushing down until it snaps into place.

## Cleaning the Print Head

To maintain a good print quality, it is recommended that the print head be cleaned at least once a year or up to once a month if the printer is used heavily. The print head should be cleaned immediately, however, if the print becomes visibly fainter due to contamination of the print head.


Clean the print head as follows:

### Material Required:

- Isopropyl Alcohol
- Cotton swabs

### Procedure:

1. Switch OFF printer.

 **CAUTION:** Allow the print head to cool before cleaning, otherwise damage to the print head may occur.

2. Open paper cover and remove paper roll.

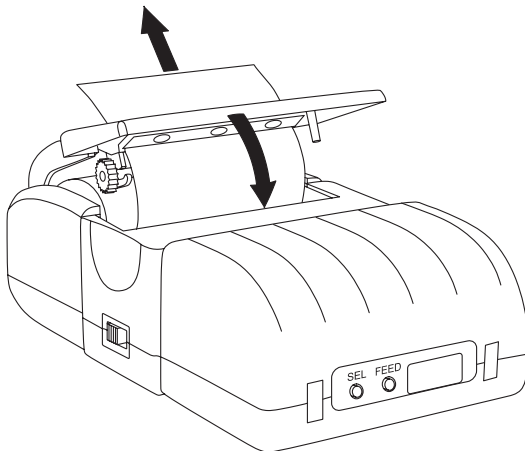
3. Using a cotton swab dampened with alcohol, wipe the heating dots of the print head. *Be careful not to touch the heating dots with your fingers.*
4. Allow the alcohol to dry.
5. Reload the paper and close the paper cover.

## Installing the Paper

Replace the paper when it runs out as indicated by the front panel green Power LED flashing.

1. Open the paper cover as previously described.
2. Remove the spent paper core.
3. Drop in a new paper roll so that it will rotate in the direction shown in Figure 2.
4. Insert edge of paper roll into slot in cover next to cutter; then close cover. Remove any slack by pulling out about  $\frac{1}{2}$  inch of paper from the printer.

**Note:** *If there was unprinted data in memory when the paper ran out, and the printer was not shut OFF, then the printer will automatically go on-line and print the remaining data 5 seconds after closing the paper cover.*



**Figure 2. Installing the Paper**

# Parts & Service

## Replacement Parts

	<b>Part No.</b>
<b>Complete Printer Kits:</b>	
<b>120VAC:</b> includes printer, 120V AC adapter, 12V in-car charger, belt clip, and instruction manual .....	24-1229
<b>230VAC:</b> includes printer, 230V AC adapter, 12V in-car charger, belt clip, and instruction manual .....	24-1230
Paper roll, thermal .....	06-8733
Battery pack, rechargeable 7.2V, Lit-ion .....	24-1244
AC adapter:	
120 VAC .....	24-1243
230 VAC .....	24-1245
12V in-car charger .....	24-1250

## Sales / Service Centers

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